

STATE OF ALASKA

William A. Egan, Governor

Alaska Department of Fish and Game

C. L. Anderson, Commissioner

Sport Fish Division

E. S. Marvich, Director

ANNUAL REPORT OF PROGRESS, 1959-1960

FEDERAL AID IN FISH RESTORATION PROJECT F-5-R-1

SPORT FISH INVESTIGATIONS OF ALASKA

ARLIS

Alaska Resources
Library & Information Services
Anchorage, Alaska

Alex H. McRea, Coordinator, Juneau
Robert T. Baade, Research Biologist, Ketchikan
Gary L. Finger, Research Biologist, Juneau
Jean R. Dunn, Research Biologist, Seward
Edward J. Cramer, Research Biologist, Anchorage
Rupert E. Andrews, Research Biologist, Palmer
Roger J. Reed, Research Biologist, Fairbanks

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Introduction

This report of progress consists of the Job Completion Reports from the State of Alaska's Federal Aid in Fish Restoration Project F-5-R-1.

In 1959 the Alaska Department of Fish and Game, as an agency of the new state, became eligible for participation in the program. Prior to this time the Federal Aid in Fish Restoration activity in Alaska had been a function of the Fish and Wildlife Service. During territorial status the federally conducted operation was appreciably less than the program now possible as a state.

The new state program under the Dingell-Johnson Act was activated July 1, 1959. Eleven separate studies made up the "Sport Fish Investigations of Alaska" project. Eight of the eleven were designed to reconnoiter the state's recreational fisheries resource and to provide background for the development of specific investigations as the need became apparent. Three problems of immediate concern appeared sufficiently defined and full scale investigations were mounted to explore their management implications. These included studies of Arctic grayling, Southeastern king salmon and recreational fishing access.

All of the investigations pose problems unique to Alaska in some respects and all provide ample scope for original work in the fisheries field. The recreational fishing access study is an example. Most of Alaska's fishing waters are still in the public domain and unfettered by private holdings--a unique situation. Successful prosecution of this activity now and in the immediate future can forestall many of the serious recreational use problems currently facing other states.

The various studies were staffed as personnel were recruited. Field work began as the supplies and equipment were procured. Initial progress was slowed somewhat by this and the necessary period of personnel indoctrination. A "cutoff" date for each job from one to three months before July, 1960 shortened the period covered. As a result, these first reports encompass an effective working period of considerably less than one year.

The enclosed progress reports are fragmentary in many respects and the interpretations contained therein are subject to re-evaluation as the work progresses.

ANNUAL REPORT OF PROGRESS
INVESTIGATIONS PROJECTS
COMPLETION OF 1959-1960 SEGMENT

State: ALASKA

Project No.: F-5-R-1 Name: Sport Fish Investigations
of Alaska

Job No.: 1-C Title: Inventory and Cataloging
of the Sport Fish and
Sport Fish Waters in the
Cook Inlet and Copper
River Drainages

Period Covered: July 1, 1959 to May 15, 1960.

Abstract:

The inventory and cataloging activities were conducted primarily in the Upper Cook Inlet watershed. Published and unpublished data from the Fish and Wildlife Service and the Department of Fish and Game were reviewed, evaluated and in some instances incorporated with the findings of the present investigation. Standard survey techniques were used in assessing the waters, the emphasis being placed on lakes available to the anglers by road. It was found the Salmonidae and to a lesser extent grayling comprised the desirable sport fish populations. Their distribution within the area is presented.

Standard forms were devised and the information collected on each body of water is available at the Palmer, Anchorage and Juneau offices.

The waters surveyed and the results of the test netting and water analysis are tabulated.

Recommendations for intensive management are presented for 7 lakes. It is also recommended the survey and cataloging activity be continued and directed outward from the Matanuska Valley to the Willow-Talkeetna and Glenn Highway areas.

Objectives:

To evaluate the extent, the potential and the current use of the waters readily available to the area's anglers.

To determine the relative need for further management investigations and to direct the course of such studies.

Introduction:

The sport fisheries in the Cook Inlet drainage are concerned primarily with species of the family Salmonidae and to a limited extent the grayling (Thymallus arcticus signifer).

The sport fishing waters accessible to the centers of population in Anchorage and the Matanuska Valley are subjected to quite intensive angling pressure. The fish resources are considerable, but are not adequately known for proper management. The area enjoys the most extensive road system in the state, thus serving to make available to anglers a considerable portion of these sport fishing waters.

The initial investigation, from July 1, 1959 to May 15, 1960, extended from the city of Anchorage on the south, the Susitna River drainage on the west from the town of Willow, south and east through the Matanuska Valley up the Glenn Highway, Figure 1.

Most of the lake surveys were of a general reconnaissance nature to determine as quickly as possible the main areas of investigation for future study.

To organize data in an orderly fashion, certain standard forms were devised for the recording and filing of field information, Appendix 1.

As successive years of data accumulate for each area listed, a complete dossier of physical, chemical, biological and management practices will be accumulated.

Lakes checked for dissolved oxygen content are presented in Table 2 and comparative test netting results are summarized in Table 3.

Techniques:

1. Background information from prior studies, conducted by the Bureau of Sport Fisheries and Wildlife, U. S. Fish and Wildlife Service, the Alaska Department of Fish and Game and the Bureau of River Basin Studies, U. S. Fish and Wildlife Service was obtained, evaluated and, in part, incorporated in the investigation.
2. The species distribution of fishes, estimates of their comparative abundance, age composition and growth rates were made by test netting with a 125 foot, variable mesh experimental type gill net.
3. Physical, chemical, and biological characteristics were compiled through standard lake survey techniques. During the winter months, oxygen tests were made by means of a Kemmerer water sampler. The samples were analyzed in the field by the standard Winkler method to determine the quantity of dissolved oxygen in parts per million. Ph determinations were made with a Hellige pocket comparator.

Findings:

Thorough or partial investigations were conducted on the 52 lakes during the investigation period, Table 1.

Detailed information concerning each lake presented may be obtained from the files of the Palmer field office, Anchorage management office, and the division office in Juneau.

Recommendations:

Lakes investigated and found having little or no value to fish management practices:

Wolf Lake
Jacobsen Lake

The following lakes were investigated and found to be feasible for management and are recommended for rehabilitation and stocking:

Finger Lake
Lucille Lake
Jean Lake
Willow Lake

12 Mile Lake
Lynn Lake
Bumble Bee Lake
Kelly Lake

It is recommended that the present job project of inventory and cataloging be continued.

Two areas of importance to sport fishing interests predominate; the Willow-Talkeetna area of the Big Susitna River drainage, and the accessible lakes and streams on both sides of the Glenn Highway from Palmer to Glennallen.

The Willow-Talkeetna area provides the only King Salmon sport fishery in close proximity to the Matanuska Valley and contributes an important rainbow trout, grayling, and silver salmon sport fishery. The entire area along the east side of the Big Susitna River drainage is accessible by train, either from Anchorage or Fairbanks.

A new road is presently being constructed from the town of Willow, north to Mt. McKinley National Park and eventually will extend to Fairbanks. The impact of such a road on the sport fish stocks will be more than considerable when one considers that this will be the major route of sportsmen, tourists and other travellers from the greater Anchorage area to Mt. McKinley and Fairbanks and also in the opposite direction. In addition, there is virtual population explosion along the route of the proposed highway. It is of the utmost importance that sport fish populations in this area be assessed to meet the expected increased sport fishing pressures.

At present, insufficient data or none at all exists for the accessible lakes and streams along the Glenn Highway from Palmer to Glennallen for proper management. An intensive inventory of these waters is deemed advisable to meet the increased sport fishing pressures.

Submitted by:

Rupert E. Andrews
Research Biologist
1 June 1960

Approved by:

Alex H. McRea
D-J Coordinator

E. S. Marvich, Chief
Sport Fish Division

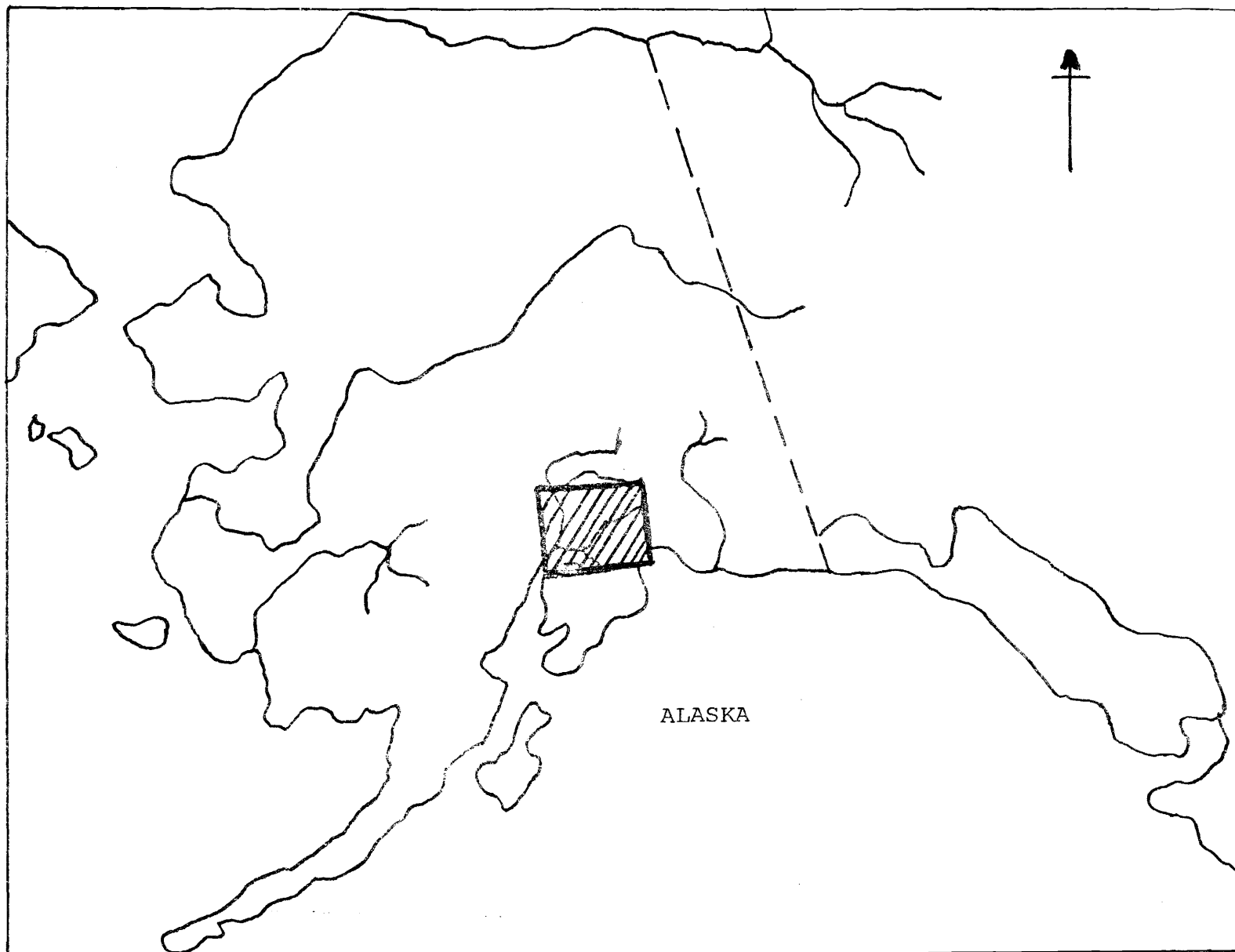


Figure 1. Diagrammatic outline of the state of Alaska indicating area of investigation of Project No. F-5-R-1, Job No. 1-C.

Table 1. Lakes that have received partial or complete surveys.

NAME

Anderson Lake	T 18N, R1W, Sec. 30
Big Lake	Long. $150^{\circ} 05''$, Lat. $61^{\circ} 28''$
Bradley Lake	T 17N, R 1 E, Sec. 24
Blueberry Lake	Long. $146^{\circ} 10''$, Lat. $61^{\circ} 05''$
Bladgett Lake	T 17N, R 3 W, Sec. 30
Barbara Lake	T 17N, R 4 W, Sec. $\frac{3-4}{9-10}$
Bumble Bee Lake	T 19N, R 4 W, Sec. 29-30
Beaver Lake	T 17N, R 3 W, Sec. 4-9
Cornelius Lake	T 17N, R 1 E, Sec. 22-27
Clunie Lake	T 15N, R 2 W, Sec. 28-33
De Laney Lake	T 3N, R 4 W, Sec. 10
Echo Lake	T 17N, R 1 E, Sec. 24
Finger Lake	T 17N, R 1 E, Sec. $\frac{33-34}{4}$
Florence Lake	Long. $150^{\circ} 06''$, Lat. $61^{\circ} 43''$
(Upper) Fire Lake	T 15N, R 1 W, Sec. 31
(Lower) Fire Lake	T 15N, R 1 W, Sec. 31
Frank & Jerry Lake	Long. $146^{\circ} 46'$, Lat. $61^{\circ} 59'$
Falk Lake	T 17N, R 2 E, Sec. 14
Green Lake	T 13N, R 4 W, Sec. 33-34
Horse Shoe Lake	T 17N, R 4 W, Sec. $\frac{11-12}{13-14}$
Index Lake	T 20N, R 8 E, Sec. 23
Ida Lake	T 20N, R 5 E, Sec. 26
Irene Lake	T 17N, R 1 E, Sec. 13
Jim Lake	Long. $148^{\circ} 55'$, Lat $61^{\circ} 33'$
Jacobson Lake	T 17N, R 2 W, Sec. 2-7
Kelley Lake	T 19N, R 4 W, Sec. 28
Kings Lake	T 18N, R 1 W, Sec. 30
Keppler Lake	T 17N, R 3 W, Sec. 24
Knik Lake	T 16N, R 3 W, Sec. 19
Liela Lake	Long. $147^{\circ} 27'$, Lat. $61^{\circ} 46'$
Lake Louise	Long. $146^{\circ} 30'$, Lat. $62^{\circ} 15'$
Long Lake	Long. $150^{\circ} 05'$, Lat. $61^{\circ} 43'$
Long Lake	T 17N, R 1 E, Sec. 14-13
Lynn Lake	T 19N, R 4 W, Sec. 26
Lucille Lake	T 17N, R 1 W, Sec. 8-9
Lower Bonnie Lake	T 20N, R 6 E, Sec. 20-19
Little Beaver Lake	T 17N, R 3 W, Sec. 15

Table 1. (Continued) Lakes that have received partial or complete surveys.

NAME

Matanuska Lake	T 17N, R 1 E, Sec. 23
Meir Lake	T 17N, R 1 E, Sec. 18
Merriam Lake	T 16N, R 4 W, Sec. 1
Mirror Lake	T 15N, R 1 W, Sec. 2
Nancy Lake	T $\frac{18N}{19N}$, R 4 W, Sec. $\frac{33-34}{3-4}$
O. Her Lake	T 14N, R 3 W, Sec. 19
Ravine Lake	T 20N, R 6 E, Sec. 19
Rocky Lake	T 17N, R 3 W, Sec. $\frac{16}{21}$
Stepan Lake	T 17N, R 3 W, Sec. $\frac{2}{16}$
Twelve-mile Lake	Long. 149° 43", Lat. 61° 46"
Wasilla Lake	T 12N, R 1 W, Sec. $\frac{1-2}{11-12}$
Weiner Lake	T 20N, R 7 E, Sec. 22
Windy Lake	T 19N, R 4 W, Sec. $\frac{25}{36}$
Wolf Lake	T 18N, R 1 E, Sec. 16
Willow Lake	T 19N, R 4 W, Sec. $\frac{7-8}{18-17}$

Table 2. Lakes tested for dissolved oxygen content.

DATE	NAME	LOCATION	STATION NO.	DEPTH	SNOW	ICE	SAMPLE DEPTH	O2 PPM	Ph
2/5/60	Wolf Lake	T 18N, R 1 E, Sec. 16	1	14'	0	20"	2' 5' 10'	0.6 0.5 0	6.7 6.7 7.0
12/8/59 2/10/60	12 Mile Lake	Long. 149° 43', Lat. 61° 46'	1 2	9' 11'	10" 8"	18" 20"	5' 2' 5' 10'	10.6 9.0 8.7 7.4	7.25 7.25 7.25 7.25
2/11/60 4/21/60	Jacobson Lake	T 17N, R 2 W, Sec. 2-7	1 2	16' 15'	2" 0	16" 12"	2' 5' 10' 15' 5' 10'	5.0 4.6 0.7 0 8.3 8.6	6.5 6.5 6.5 6.5 6.5 6.3
2/12/60	Bumble Bee Lake	T 19N, R 4 W, Sec. 29-30	1	25'	10"	18"	5' 10' 20'	8.9 7.0 5.0	7.1 7.1 7.1
2/12/60	Lynn Lake	T 19N, R 4 W, Sec. <u>25</u> 36	1	32'	10"	17"	5' 15' 30'	8.7 7.6 6.5	7.1 7.1 7.1

Table 2. (Continued) Lakes tested for dissolved oxygen content.

DATE	NAME	LOCATION	STATION NO.	DEPTH	SNOW	ICE	SAMPLE DEPTH	O2 PPM	Ph
2/15/60	Windy Lake	T 19N, R 4 W, Sec. <u>25</u> 36	1	15'	10"	18"	5' 10' 14'	4.4 0.6 0	6.5 6.5 6.5
2/17/60	Triangle Lake	T 17N, R 1 E, Sec. <u>14-13</u> 23-24	1	26'	7"	18"	5' 15' 25'	2.8 0.4 0	7.25 7.25 7.25
			2	30'	0	17"	5' 10'	7.6 8.1	7.75 7.75
2/18/60	Otter Lake	T 14N, R 3 W, Sec. 19	1	15'	6.5"	24.5"	5' 10'	5.0 2.4	7.25 7.25
2/18/60	Mirror Lake	Mile 24 Palmer Highway	1	6'	6"	20"	2' 5'	3.5 2.8	7.25 7.25
4/18/60			2	5'	0	22"	5'	4.4	7.0
3/11/60	Jean Lake	T 19N, R 4 W, Sec. 19	1	6'	10"	24"	5'	6.9	6.5

Table 2. (Continued) Lakes tested for dissolved oxygen content.

DATE	NAME	LOCATION	STATION NO.	DEPTH	SNOW	ICE	SAMPLE DEPTH	O2 PPM	Ph
3/11/60	Kelley Lake	T 19N, R 4 W, Sec. <u>21</u> 28	1	15'	11"	20"	5'	4.6	6.75
							10'	1.5	6.75
							15'	1.3	6.75
			2	15'	5"	22"	5'	5.6	6.6
							10'	0.7	6.5
3/14/60	Lynx Lake	T 19N, R 4 W, Sec. <u>27-26</u> 34-35	1	45'	8"	28"	5'	7.7	6.75
							20'	6.2	6.75
							30'	5.7	6.75
3/14/60	Long Lake	T 17N, R 3 W, Sec. 11	1	15'	6"	22"	5'	5.0	6.5
							10'	2.4	6.5
3/14/60	Twin Lake	T 17N, R 3 W, Sec. <u>10</u> 11	1	18'	6"	25"	5'	4.8	6.5
							10'	2.0	6.5
4/18/60	Clunie	T 15N, R 2 W, Sec. <u>28</u> 33	1	10'	0	22"	5'	2.7	6.5
							10'	2.9	6.25

Table 2. (Continued) Lakes tested for dissolved oxygen content.

DATE	NAME	LOCATION	STATION NO. DEPTH		SNOW	ICE	SAMPLE DEPTH	O2 PPM	Ph				
4/19/60	Finger Lake	T 17N, R 1 E, Sec. $\frac{33-34}{4}$	1	32'	0	4"	5'	11.2	7.75				
							15'	11.8	7.75				
							30'	2.4	7.0				
11/30/59	Lucille Lake	T 17N, R 1 W, Sec. 8-9	1	15'	0	22"	2'	13.9	7.25				
5'							12.5	7.25					
10'							10.1	7.25					
2/11/60			2	15'	0	22"	5'	2.5	7.25				
							10'	0.5	7.1				
							15'	1.0	7.1				
4/19/60			3	5'	0	22"	3'	4.2	7.25				
							4	14'	0	13"	5'	12.1	7.75
											10'	13.4	7.75
							5	7'	0	13"	4'	10.7	7.75
4/20/60	Knik Lake	T 16N, R 3 W, Sec. 19	1	15'	0	19"	5'	5.1	7.1				
							10'	4.6	7.1				
4/21/60	Falk Lake	T 17N, R 2 E, Sec. 16	1	27'	0	20"	5'	8.1	6.75				
							10'	6.7	7.25				
4/22/60	Canoe Lake	T 17N, R 1 E, Sec. 13	1	28'	0	17"	5'	10.2	7.25				
							10'	7.0	7.5				

Table 3. Test Netting Results - 1959

NAME	NUMBER	SPECIES	LENGTH RANGE	MEAN	FREQUENCY	% COMPOS- ITION
Barbara Lake	11	RB	13.1-18.3	16.2	.25	31.4
	16	SS	5.7-6.6	6.0	.36	45.7
	8	Sucker	8.0-21.0	14.2	.18	22.8
Beaver Lake	10	RB	8.3-18.8	11.9	.227	45.5
	2	SS	6.0-6.2	6.1	.045	8.0
	10	Sucker	16.2-18.2	18.2	.227	45.5
Blueberry Lake	5	RB	10.2-14.6	11.4	.29	100
Cornelius Lake	12	RS	18.5-22.6	20.6	.25	40.0
	1	SS		6.5	.02	3.0
	7	RB	6.5-10.5	7.7	.145	23.3
	10	Sucker	6.4-19.4	11.6	.20	33.3
Clunie Lake	19	RB	6.7-12.1	8.2	.197	100
Echo Lake	1	SS		9.6	.0108	100
Falk Lake	3	RB	9.3-11.4	10.1	.065	100

Table 3. (Continued) Test Netting Results - 1959.

NAME	NUMBER	SPECIES	LENGTH RANGE	MEAN	FREQUENCY	% COMPOS- ITION
Finger Lake	20	DV	7.0-22.8	17.8	.435	37.7
	1	SS		9.2	.021	1.9
	32	Sucker	8.5-14.5	11.0	.696	60.4
Horse Shoe Lake	2	RB	8.0-20.7	14.4	.038	25.0
	6	SS	5.6-6.3	6.1	.115	75.0
Ida Lake	10	RB	6.8-12.3	9.3	.416	83.4
	2	RS	6.8-6.8	6.8	.08	16.6
Index Lake	No Fish	-----	Barren of Sport Fish			
Irene Lake	20	RB	6.5-16.8	11.1	.416	100
Keppler Lake	30	RB	5.3-22.5	8.45	.625	100
Knik Lake	9	RB	8.4-14.8	10.3	.225	100
Lila Lake	10	GR	7.7-12.7	10.4	.208	50
	4	Burbot	23.5-30.8	27.2	.083	20
	6	Sucker	8.0-12.5	10.0	.125	30

Table 3. (Continued) Test Netting Results - 1959

NAME	NUMBER	SPECIES	LENGTH RANGE	MEAN	FREQUENCY	% COMPOS- ITION
Lucille Lake	4	RB	6.4-21.3	15.5	.095	100
Lake Louise	16	LT	15.9-29.6	21.2	.222	13.8
	91	WF	7.0-18.2	11.0	1.26	78.4
	9	Sucker	12.0-21.0	19.0	.125	7.8
Long Lake (Mile 86)	25	GR	6.5-17.0	14.0	1.04	89.3
	2	Burbot			.083	7.1
	1	Sucker			.042	3.6
Lower Fire Lake	7	DV	6.0-11.3	8.9	.292	31.8
	15	RB	5.5-10.8	7.3	.682	68.2
Lower Bonnie	27	RB	6.0-14.5	11.1	.56	100
Little Beaver Lake	2	RB	14.1-19.8	16.9	.036	28.5
	3	SS	11.7-14.5	12.9	.056	42.9
	2	Sucker	9.0-13.5	11.2	.037	28.5
Matanuska Lake	24	RB	6.1-19.0	9.1	.257	100

Table 3. (Continued) Test Netting Results - 1959

NAME	NUMBER	SPECIES	LENGTH RANGE	MEAN	FREQUENCY	% COMPOS- ITION
Meir Lake	15	RB	5.2-11.5	7.9	.27	93.7
	1	SS		6.3	.018	6.3
Mirror Lake	22	RB	7.0-10.4	8.8	.366	23.4
	72	SS	6.3-7.4	6.9	1.20	76.6
Nancy Lake	37	RB	9.8-19.0	14.9	.88	61.6
	7	DV	9.2-13.5	10.9	.16	11.6
	6	WF	12.0-15.7	13.3	.14	10.0
	8	Sucker	8.2-13.2	12.0	.19	13.3
	2	SS	6.8-7.6	7.2	.049	3.3
Otter Lake	30	RB	5.3-15.5	12.3	.75	100
Ravine Lake	11	RB	7.3-8.6	8.0	.229	100
Rocky Lake	5	RB	9.4-13.1	10.5	.192	100
Stepan Lake	13	RB	11.4-17.8	14.9	.288	81.3
	3	SS	5.6-10.6	7.3	.066	18.7

Table 3. (Continued) Test Netting Results - 1959.

NAME	NUMBER	SPECIES	LENGTH RANGE	MEAN	FREQUENCY	% COMPOS- ITION
Sundi Lake	28	RB	5.9-11.1	9.3	.70	100
Weiner Lake	18	RB	5.8-13.3	6.8	.75	100
Willow Lake	2	SS	10.3-15.4	12.8		
	47	Sucker	7.5-18.0	11.5	1.47	95.7

STREAM SURVEY

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
DIVISION OF SPORT FISHERIES

STREAM SUMMARY

STREAM

T.....R.....SEC.....M.....

SEC. NO.....

1. OTHER NAMES OF STREAM _____
2. TRIBUTARY TO _____ MAIN DRAINAGE _____
3. STREAM SECTION _____ FROM _____ LENGTH _____
TO _____
4. ACCESSIBILITY (how reached, condition of roads) _____
5. ELEVATION: UPPER END OF SECTION _____ LOWER END OF SECTION _____
6. TRIBUTARIES _____
7. WATER SUPPLY _____ NORMAL FLOW(circle) 1,2,3,4,5,6,7, _____
DEGREE OF FLOODING _____
8. POLLUTION _____
9. DAM-LOCATION _____ OWNER _____ USE _____
HEAD _____ EFFECT ON LEVEL _____ PASSABLE FOR FISH _____
10. IMMEDIATE SHORE _____
11. SURROUNDING COUNTRY _____
12. FISHING: GENERAL REPUTATION _____
HISTORY _____
REPORTED BY _____
INTENSITY (heavy, medium, light) _____ SUMMER _____ WINTER _____
PUBLIC FISHING? _____ EASILY FISHED? _____
13. USE OF WATER _____
14. SPAWNING GROUNDS _____
15. PREDATORS _____
16. BEAVER _____
17. REMARKS _____

	LOWER	MIDDLE	UPPER
18. STATION _____			
19. AVERAGE WIDTH AND DEPTH _____			
20. VOLUME _____			
21. VELOCITY _____			
22. COLOR AND TURBIDITY _____			
23. DISSOLVED SOLIDS _____			
24. POOLS (size, type, frequency) _____			
25. BOTTOM TYPES: POOLS _____			
RIFFLES _____			
26. SHADE - COVER _____			
27. AQUATIC VEGETATION _____			
28. FISH FOODS (abundance) _____			
(dominant types) _____			
29. GAME FISH	ABUNDANCE, DOM.SIZE IN	ABUNDANCE, DOM.SIZE IN	ABUNDANCE, DOM.SIZE IN
	CATCH & GROWTH RATE	CATCH & GROWTH RATE	CATCH & GROWTH RATE
OTHER FISH _____			
30. CONTINUATIONS (use item numbers): _____			
31. PREPARED BY _____		DATE OF SURVEY _____	

LAKE SURVEY	STATE OF ALASKA DEPARTMENT OF FISH AND GAME DIVISION OF SPORT FISH	LAKE SUMMARY
LAKE.....		T.....R.....Sec..... Long.....Lat.....

1.	Other names of lake
2.	Accessibility (how reached, condition of roads)
3.	Outlet (immediate and main drainage) elevation
4.	Dam in outlet distance from lake height
5.	Inlets (name, size & permanency) drainage area
6.	Pollution (kind, source, severity)
7.	Immediate shore (topography, soil, cover)
8.	Surrounding country (topography, soil, cover)
9.	Use (private, public, semi-private) public fishing site
10.	Approximate number of cottages hotels resorts boat liveries
11.	Fishing: general reputation history:
	intensity (heavy, medium, light) reported by summer winter
12.	Other uses
13.	Area shore development maximum depth
14.	Area of vegetation (acres) percent shoal (less than 15 ft)
15.	Slope at drop-off (gradual, steep)
16.	Bottom soil: shoal deep water
17.	Color Secchi disk (range) turbidity
18.	Depth range where temperature is below 70°F and O ₂ above 4 PPM Dis. solids
19.	Cover (kind, abundance)
20.	Vegetation (type, abundance)
21.	Food (abundance, dominant organisms): plankton bottom: shoal depths vegetation
22.	Spawning grounds (summarize observations and reports)
23.	Predators (kind and abundance)
24.	Severity of fish losses cause
25.	Game fish abundance dominant size in catch growth rate
	other fish
26.	Continuations (use item numbers):
27.	Prepared by: date of survey

ALASKA DEPARTMENT OF FISH AND GAME

Division of Sport Fish Gill-Net Sampling Record

Set No.: _____ Lake _____ Location of Set _____
 Weather _____ Type of bottom _____
 Temp.: Set: Water (surf) _____ F (bottom) _____ F Set: Time _____ Date _____
 Lift: Water (surf) _____ F (bottom) _____ F Lift: Time _____ Date _____
 Net Type _____, Length _____ Depth of Set: _____ ft. to _____ ft.
 Mesh Size _____ Depth _____ Shallow end mesh size _____
 Number of hours net fished _____ Observer _____

CATCH

Species	L	W	Species	L	W	Species	L	W	Species	L	W
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
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STATE OF ALASKA
DEPARTMENT OF FISH AND GAME
DIVISION OF SPORT FISH

ELECTRIC STREAM CENSUS FORM

STREAM.
DATE.....;

T....R....SEC....M....
Long..... Lat....

DEFINITION OF STREAM SECTION

(A) STREAM BOTTOM (%) : _____ BOULDERS _____, _____ RUBBLE _____, GRAVEL _____
SAND _____, CLAY _____, MUCK _____, OTHER _____
(B) STREAM BOTTOM (%) : _____ BOULDERS _____, _____ RUBBLE _____, GRAVEL _____
SAND _____, CLAY _____, MUCK _____, OTHER _____
(A) AVE. WIDTH _____ FT. : AVE. DEPTH _____ FT, (B) AVE. WIDTH _____ FT. : AVE. DEPTH _____ FT
(A) SHORELINE (%) : _____ BOULDERS _____, _____ RUBBLE _____, GRAVEL _____, CLAY _____
SAND _____, MUCK _____, GRASS _____, BRUSH _____, OTHER _____
(B) SHORELINE (%) : _____ BOULDERS _____, _____ RUBBLE _____, GRAVEL _____, CLAY _____
SAND _____, MUCK _____, GRASS _____, BRUSH _____, OTHER _____
(A) TYPE OF BANK (DESCRIBE) _____
(B) TYPE OF BANK (DESCRIBE) _____
(A) BRUSH COVER (DESCRIBE) _____
(B) BRUSH COVER (DESCRIBE) _____
(A) DESCRIBE VELOCITIES, POOLS, OBSTRUCTIONS, ETC. _____

(B) DESCRIBE VELOCITIES, POOLS, OBSTRUCTIONS, ETC. _____

DRAINAGE CHARACTERISTICS _____

WHY POPULATION SAME OR DIFFERENT IN A & B _____

FACTORS DETERMINING POPULATION COMPOSITION AND LEVEL _____

FACTORS ADVERSE TO SHOCKING IN A & B _____

COMPLETENESS OF FISH REMOVAL IN A & B _____

DIS. SOLIDS _____ PPM. TURBIDITY _____ COLOR OF WATER _____ WATER TEMP. _____ °F. TIME _____
LENGTH OF (A) 150 ft. _____; LENGTH OF (B) 150 ft. _____ WHY DIFFERENT FROM 150 ft _____

GENERAL REMARKS: _____

SUBSECTION A
SPECIES WEIGHT

SUBSECTION B
SPECIES WEIGHT

SKETCH SECTION, SHOWING POOLS, RIFFLES, BRUSH COVER, DAMS, DIRECTION OF FLOW,
NORTH, WIDTH OF STREAM AT ONE OR TWO POINTS, NUMBER AND LETTER SECTIONS AND
SUBSECTIONS FROM DOWNSTREAM UP.